

(e) *Stitching.* All stitching shall be short lock stitch conforming to Stitch Type 301 of Federal Standard No. 751, and there shall be not less than 7 nor more than 9 stitches to the inch.

(f) *Workmanship.* Buoyant vests shall be of first-class workmanship and shall be free from any defects materially affecting their appearance or serviceability.

[CGFR 65-37, 30 FR 11588, Sept. 10, 1965, as amended by CGD, 72-163R, 38 FR 8120, Mar. 28, 1973]

§ 160.052-6 Construction—nonstandard vests.

(a) *General.* The construction methods used for nonstandard buoyant vests must be equivalent to those requirements in § 160.052-5 for a standard vest and also meet the requirements in this section.

(b) *Size.* Each nonstandard vest must contain the following volume of plastic foam buoyant material, determined by the displacement method:

(1) Five hundred cubic inches or more for an adult size;

(2) Three hundred and fifty cubic inches or more for a child, medium size;

(3) Two hundred and twenty-five cubic inches or more for a child, small size.

(c) *Arrangement of buoyant material.* The buoyant material in a nonstandard vest must:

(1) Be arranged to hold the wearer in an upright or backward position with head and face out of water;

(2) Have no tendency to turn a wearer face downward in the water; and

(3) Be arranged so that 70 to 75 percent of the total is located in the front of the vest.

(d) *Neck opening.* Each cloth-covered nonstandard vest must have at the neck opening:

(1) A gusset; or

(2) Reinforcing tape.

(e) *Adjustment, fit, and donning.* Each nonstandard vest must be made with adjustments to:

(1) Fit a range of wearers for the type designed; and

(2) Facilitate donning time for an uninitiated person.

[CGD 72-163R, 38 FR 8120, Mar. 28, 1973]

§ 160.052-7 Inspections and tests—standard and nonstandard vests.¹

(a) *General.* Manufacturers of listed and labeled buoyant vests shall—

(1) Maintain quality control of the materials used, the manufacturing methods and workmanship, and the finished product to meet the requirements of this subpart by conducting sufficient inspections and tests of representative samples and components produced;

(2) Make available to the recognized laboratory inspector and the Coast Guard inspector, upon request, records of tests conducted by the manufacturer and records of materials used during production of the device, including affidavits by supplier; and

(3) Permit any examination, inspection, and test required by the recognized laboratory or the Coast Guard for a produced listed and labeled device, either at the place of manufacture or some other location.

(b) *Lot size and sampling.* (1) A lot consists of 500 buoyant vests or fewer.

(2) A new lot begins after any change or modification in materials used or manufacturing methods employed.

(3) The manufacturer of the buoyant vests shall notify the recognized laboratory when a lot is ready for inspection.

(4) The manufacturer shall select samples in accordance with the requirements in Table 160.052-7(b)(4) from each lot of buoyant vests to be tested for buoyancy in accordance with paragraph (e) of this section.

TABLE 160.052-7(B)(4)—SAMPLE FOR BUOYANT VESTS

Lot size	Number of vests in sample
100 and under	1
101 to 200	2
201 to 300	3
301 to 500	4

(5) The manufacturer shall test—

¹The manufacturer of a personal flotation device must meet 33 CFR 181.701 through 33 CFR 181.705 which require an instruction pamphlet for each device that is sold or offered for sale for use on recreational boats.

(i) At least one vest from each lot for buoyancy in accordance with procedures contained in paragraph (e) of this section; and

(ii) At least one vest in each 10 lots for strength of the body strap assembly in accordance with the procedures contained in paragraph (f) of this section.

(6) If a vest fails the buoyancy test, the sample from the next succeeding lot must consist of 10 specimen vests or more to be tested for buoyancy in accordance with paragraph (e) of this section.

(7) The manufacturer shall keep on file and make available to the laboratory inspector and Coast Guard inspector the records of inspections and tests, together with affidavits concerning the material.

(c) *Additional compliance tests.* An inspector from the recognized laboratory or Coast Guard may conduct an examination, test and inspection of a buoyant device that is obtained from the manufacturer or through commercial channels to determine the suitability of the device for listing and labeling or to determine its conformance to applicable requirements.

(d) *Test facilities.* The manufacturer shall admit the laboratory inspector and the Coast Guard inspector to any part of the premises at the place of manufacture of a listed and labeled device to—

(1) Examine, inspect, or test a sample of a part or a material that is included in the construction of the device; and

(2) Conduct any necessary examination, inspection, or test in a suitable place and with appropriate apparatus provided by the manufacturer.

(e) *Buoyancy*—(1) *Buoyancy test method.* Remove the buoyant inserts from the vests. Securely attach the spring scale in a position directly over the test tank. Suspend the weighted wire basket from the scale in such a manner that the basket can be weighed while it is completely under water. In order to measure the actual buoyancy provided by the inserts, the underwater weight of the empty basket should exceed the buoyancy of the inserts. To obtain the buoyancy of the inserts, proceed as follows:

(i) Weigh the empty wire basket under water.

(ii) Place the inserts inside the basket and submerge it so that the top of the basket is at least 2 inches below the surface of the water. Allow the inserts to remain submerged for 24 hours. The tank shall be locked or sealed during this 24-hour submergence period. It is important that after the inserts have once been submerged they shall remain submerged for the duration of the test, and at no time during the course of the test shall they be removed from the tank or otherwise exposed to air.

(iii) After the 24-hour submergence period, unlock or unseal the tank and weigh the wire basket with the inserts inside while both are still under water.

(iv) The buoyancy is computed as paragraph (e)(1)(i) of this section minus paragraph (e)(i)(iii) of this section.

(2) *Buoyancy required.* The buoyant inserts from adult size buoyant vests shall provide not less than 15½ pounds buoyancy in fresh water; the inserts from child medium size vests shall provide not less than 11 pounds buoyancy; and the inserts from child small size vests shall provide not less than 7 pounds buoyancy.

(f) *Body strap test.* The complete body strap assembly including hardware, shall be tested for strength by attaching the dee ring to a suitable support such that the assembly hangs vertically its full length. A weight as specified in § 160.052-3(d) shall be attached to the other end of the snap hook for 10 minutes. The specified weight shall not break or excessively distort the body strap assembly.

(g) *Additional approval tests for non-standard vests.* Tests in addition to those required by this section may be conducted by the inspector for non-standard vests to determine performance equivalence to a standard vest. Such additional tests may include determining performance in water, suitability of materials, donning time, ease of adjustment, and similar equivalency tests. Costs of any additional tests must be assumed by the manufacturer.

[CGFR 65-37, 30 FR 11588, Sept. 10, 1965, as amended by CGD 72-90R, 37 FR 10837, May 31, 1972; CGD 72-163R, 38 FR 8120, Mar. 28, 1973; CGD 75-008, 43 FR 9772, Mar. 9, 1978]